

XIII. *A Preliminary Catalogue of British Cecidomyiidae (Diptera) with special reference to the Gall-midges of the North of England.* By RICHARD S. BAGNALL, F.L.S., and J. W. HESLOP HARRISON, D.Sc.

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FOR many years the *Cecidomyiidae*, a family of Diptera, familiar enough to naturalists in a cursory sort of way (because it embraces the little flies known as "Gall-midges"), has been neglected by British entomologists, in spite of its extent and great economic importance.

Of its members a considerable proportion are purely gall-causers, each producing its particular gall on its host-plant or plants. These galls are characteristic of the species and are therefore part of its specific characters, but, unlike many such distinctions, they can be thoroughly relied upon as a means of determining the species. They are not, as many entomologists unacquainted with their stability think, unworthy of consideration; such an opinion simply displays ignorance on the part of its holder.

Any one taking up the study of the group in real earnest will soon find that many do not fall into the category of genuine gall-makers. Their modes of life are exceedingly varied, and thereby render the subject the more interesting. Some feed as larvae under bark, in decaying wood, in stems of grasses, sedges, fungi and mosses; others, again, find their food in epiphytic fungi such as rusts, smuts and mildews. We find still more figuring as commensals and inquilines in the galls of *Cynipidae*, Gall-midges and other insects, and also of the Gall-mites (*Eriophyidae*), whilst others have larvae ectoparasitic or predatory on *Aphididae*, and Eriophyid and other mites. Of the remainder, a small number are Endoparasites, the larvae living in the abdomens of certain Hemiptera (*Aphididae*, *Psyllidae* and *Tingidae*).

Some of the *Lestremiinae*, like those of the genus *Miastor*, reproduce their kind by paedogenesis, and are of extreme

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importance in biology as suitable subjects for studying the early segregation of germ-cells.

There is no excuse for our naturalists to continue this systematic neglect of the group. Houard (1908-1913) includes descriptions of all the then-known Cecidomyid galls of the western section of the Palaearctic area in his great work on the Zooecidia. Furthermore, there has been in recent years a steady flow of literature as the result of the researches of continental entomologists such as Kieffer, Trotter, Tavares and Rübsaamen. The first-named author's monograph in Wytzman's "Genera Insectorum" (fasc. 152), which appeared in 1913, will, with the fine productions of Dr. Felt, in America, form the groundwork of much further work. Lastly, an Italian periodical, "Marcellia," edited by Prof. Trotter, keeps one up to date with new researches.

It will thus be seen that in the *Cecidomyiidae* we have a group not only displaying abundant and varied interest in its biology, but one provided with a literature unusually rich for a "neglected order."

During the past three seasons we have devoted much of our leisure in this fascinating study and with considerable success. We have therefore been tempted to publish the present list as a record of our labours and as a basis for future work and workers. We have included references to (a) original descriptions of genera and species, (b) Kieffer's 1913 Monograph, and (c) to Swanton and Houard as far as Gall-midges are concerned, quoting only the authors' numbering of the gall. In addition we have appended an index to the host-plants. Owing to the fact that Connold's works on galls are very far from complete, and also because Swanton supersedes them, we have not deemed it necessary to refer to that author.

Soon we hope to prepare a book on British Zooecidia, and later, when we have bred out and studied, as far as our limitations will allow, the life histories of the insects, we shall, in all probability, proceed with a more elaborate monograph of the Cecidomyids. It is, then, for these reasons that we characterise this as a "preliminary" list.

The species noted from the north of England, *e. g.* from the counties of Northumberland, Durham, Cumberland, Westmoreland, Lancashire, Cheshire and Yorkshire, are shown in heavy type. Species not yet reported from that area are shown in italics, whilst those ascribed to older

authors and requiring confirmation (see italicised names in Collin, 1904) are enclosed in square brackets. Although most of Walker's species are capable of being correctly assigned to Kieffer's genera, as species they are insufficiently defined and thus unrecognisable by students; they are therefore neglected here.

By keeping in close touch with each other we have been able to duplicate the records of very many of the most interesting occurrences; in fact, the wealth of records is a welcome feature. Except where a name is added all records are our own; outside the Northumberland and Durham area the first-named author is almost entirely responsible for the records from Lancashire and Cheshire (see Bagnall, 1917-1), and the few from Cumberland and Westmoreland, and from Redcar and Leeds, whilst the second-named author is similarly responsible for the Cleveland area, Yorkshire. We also add Mr. Burkill's Yorkshire records (Burkill, 1916, 1917).

An asterisk in the main list denotes species not shown in the lists of Collin, 1904, and Swanton, 1912.

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### I. CLASSIFIED LIST OF BRITISH *CECIDOMYIDAE* WITH NORTH OF ENGLAND RECORDS.

Subfamily *CECIDOMYINAE*.

Group LASIOPTERARIAE.

*Clinorrhyncha* H. Loew, 1850, p. 21.

- \*1. *C. chrysanthemi* H. Loew, 1850, p. 39; Kieffer, 1913-2, p. 19.

Affecting achenes of *Matricaria inodora* and *Anthemis Cotula*. See Houard, 5722 and 5665.

Records from all counties excepting Westmoreland.